# Addressing Defect Issues

DAT-475 Project Three

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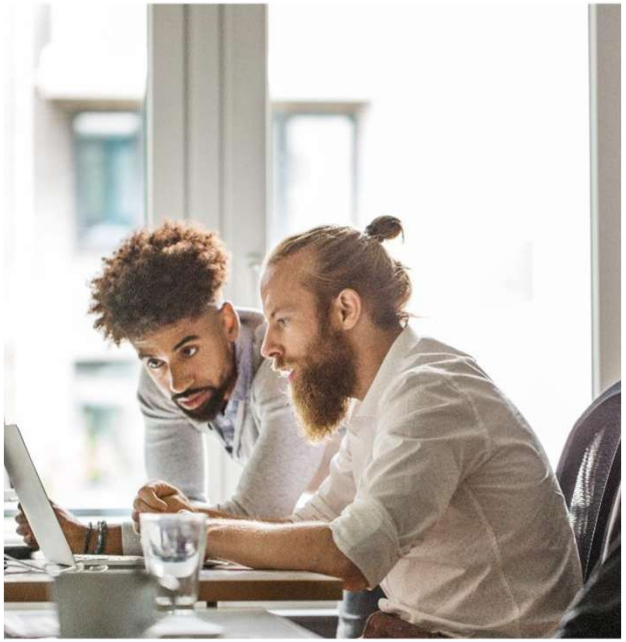
# Agenda



Overview

Pareto Charts

Potential Causes

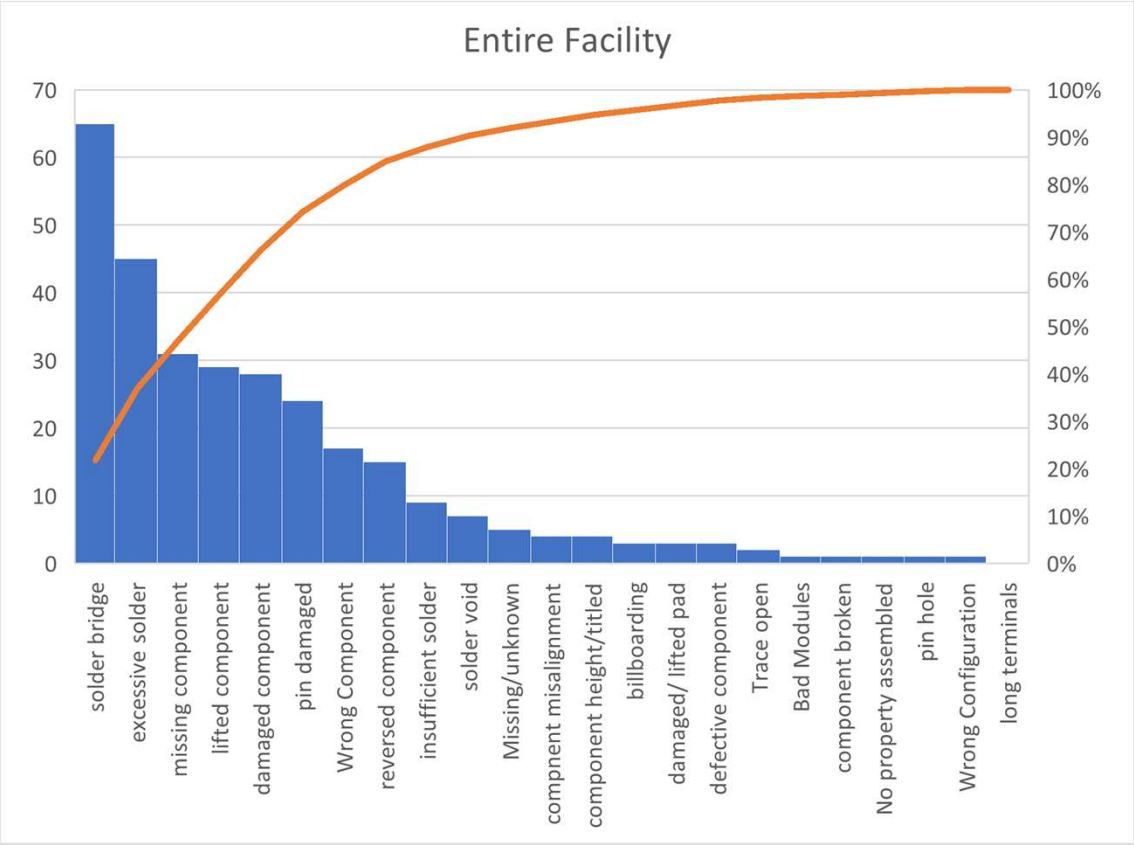
Hypothesis Testing

Conclusion

# Overview

## Why is this presentation important?

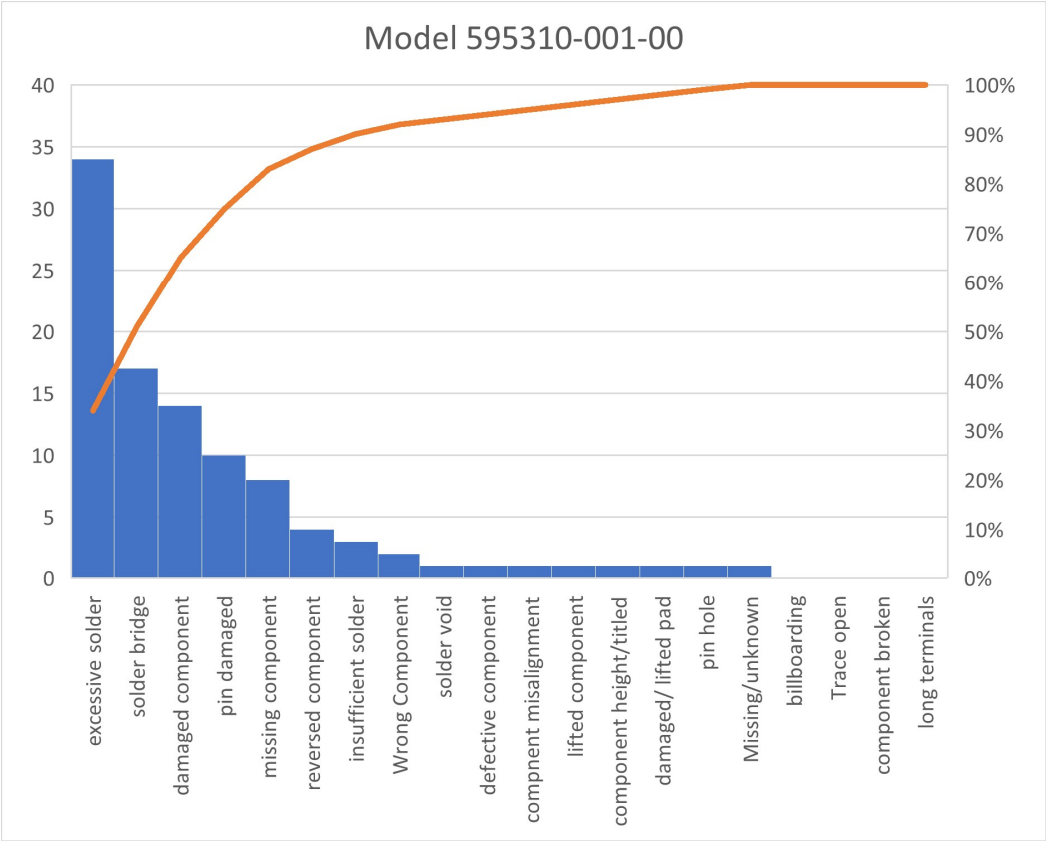
There has been a recent increase in demand for our manufactured products, and with that increase in demand, there has also been in increase in the number of defects found with our electronic boards.




# Facility Defects

Pareto Chart

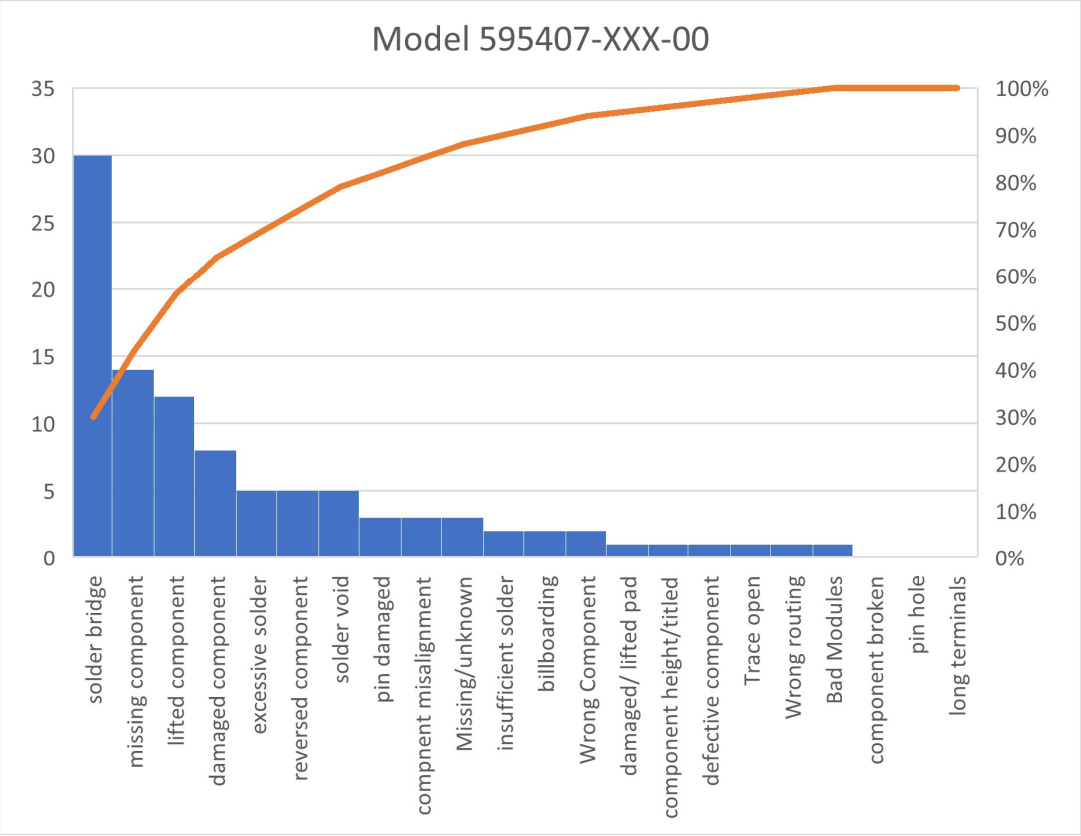
- 80% of defects attributed to:
  - Bad solder bridge
  - Excessive solder
  - Missing components
  - Lifted components
  - Damaged components
  - Damaged pins




# Model 595310-001-00 Defects

Pareto Chart

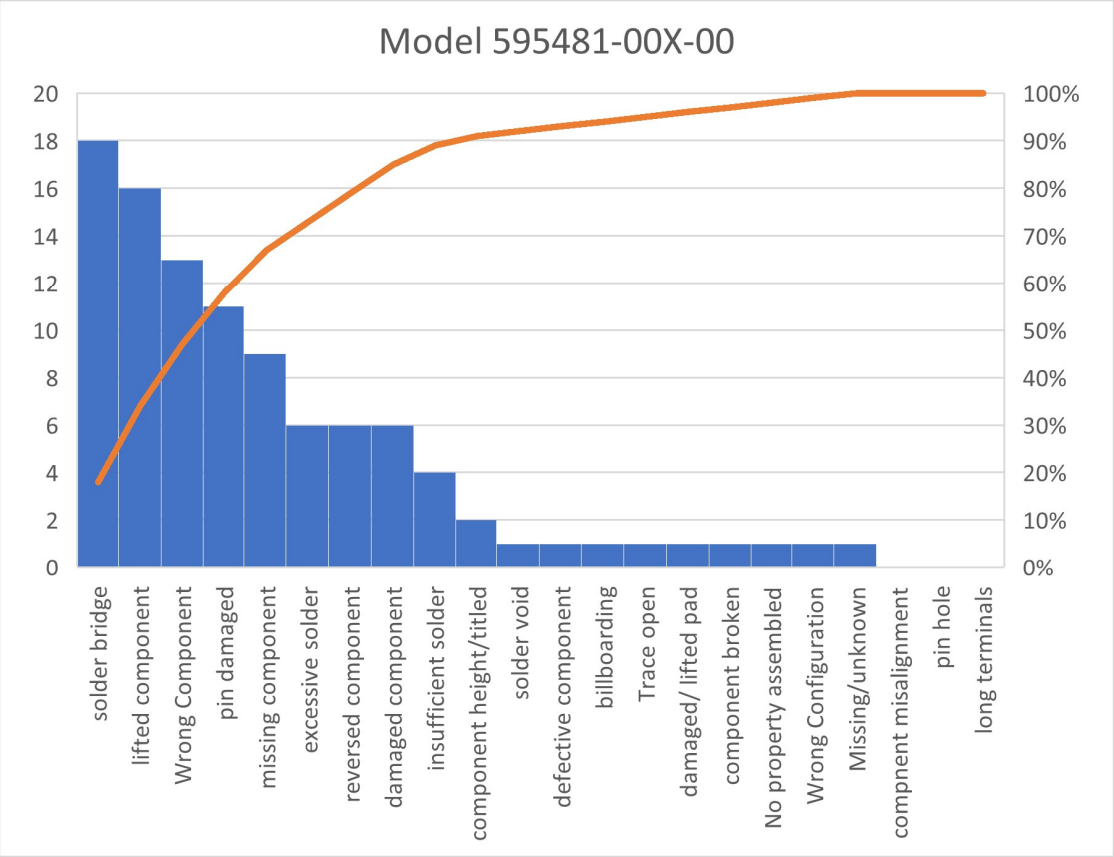
- 80% of defects attributed to:
  - Excessive solder
  - Bad solder bridge
  - Damaged components
  - Damaged pins




# Model 595407-XXX-00

Pareto Chart

- 80% of defects attributed to:
  - Bad solder bridge
  - Missing components
  - Lifted components
  - Damaged components
  - Excessive solder
  - Reversed components




# Model 595481-00X-00

Pareto Chart

- 80% of defects are attributed to:
  - Bad solder bridge
  - Lifted components
  - Wrong components
  - Damaged components
  - Damaged pins
  - Missing components
  - Excessive solder
  - Reversed components

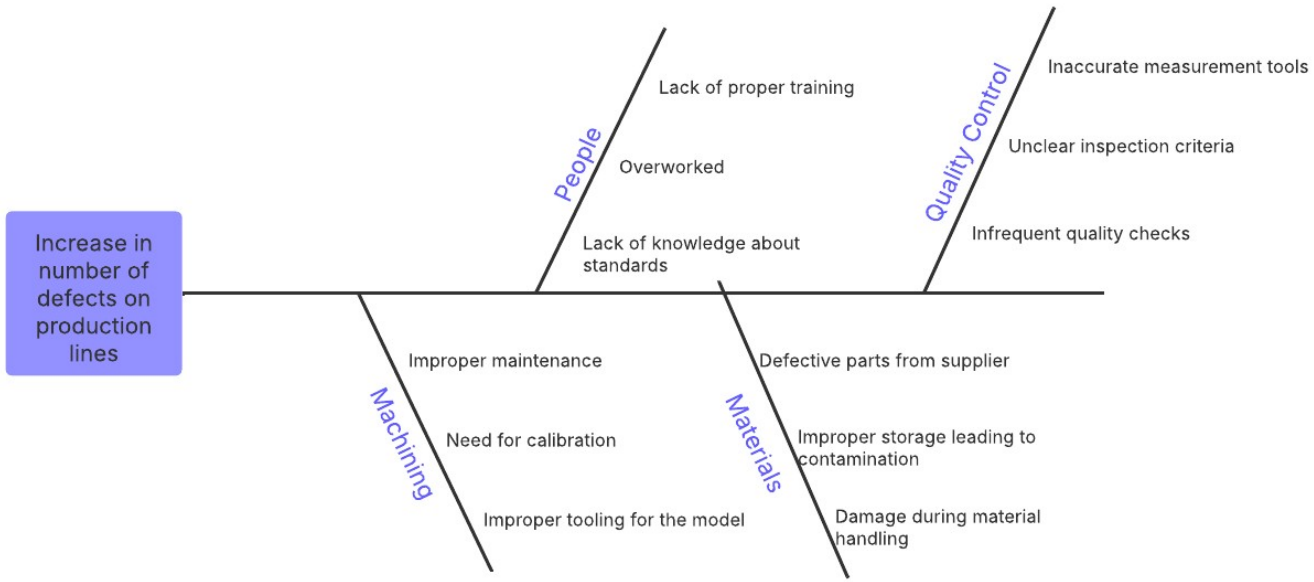
# Potential Causes

**People**

**Quality Control**

**Machining**

**Materials**



**Which model should we focus on first?**

- Pinpoint which model has the most issues to improve efficiency in defect reduction.

# Hypothesis Testing

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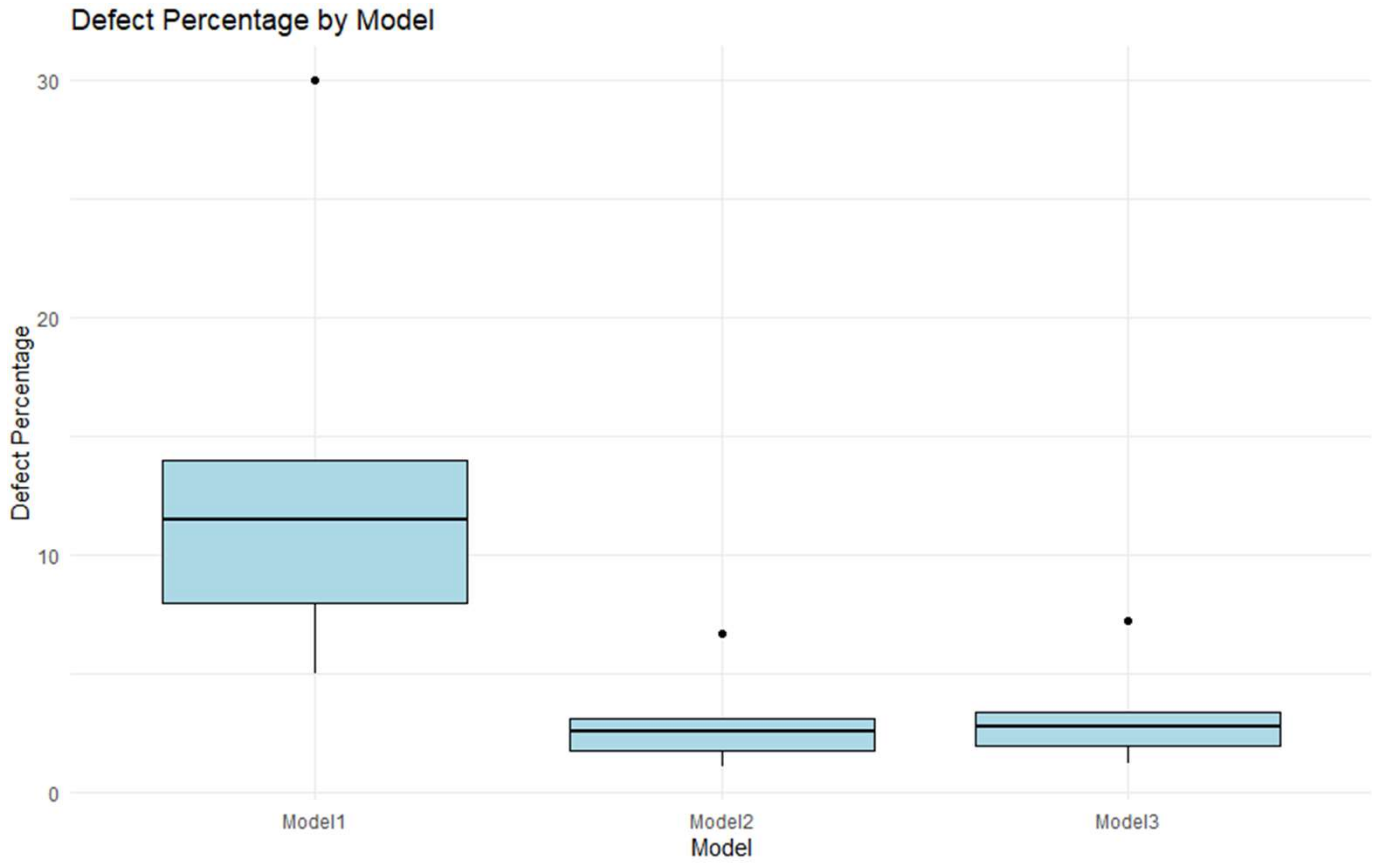
## Hypotheses

- Null hypothesis
  - There is no statistically significant difference between the mean defect percentage among Model 1, Model 2, and Model 3.
- Alternative hypothesis
  - At least one model has a statistically significant difference in mean defect percentage compared to others.

## Methodology

- Mean defect percentages
  - Model 1: 13.70%
  - Model 2: 3.05%
  - Model 3: 3.30%
- ANOVA Test
  - 5% level of significance
  - p-value = 0.0226
- Post-Hoc Test: Tukey's HSD
  - Model 2 vs Model 1: p-value = 0.0363(S)
  - Model 3 vs Model 1: p-value = 0.0409(S)
  - Model 3 vs Model 2: p-value = 0.9975(NS)

# Defect Percentage By Model



# Conclusion